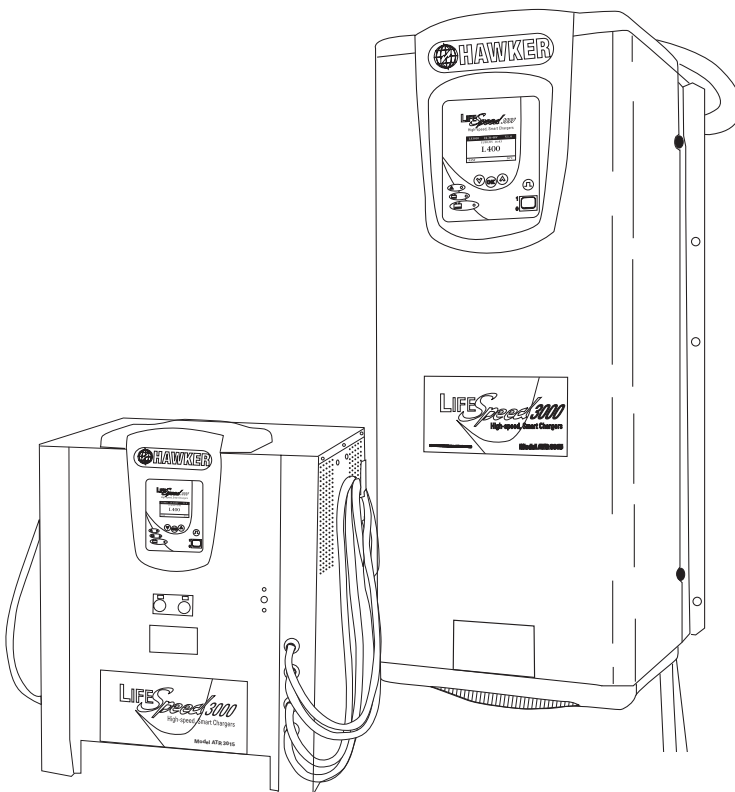




Technical Manual

GB

Hawker Lifespeed 3000



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Information

Goals of this manual

This manual is aimed at any authorized personnel wanting to use a three phase Lifespeed 3000 Series charger to recharge lead acid type industrial batteries. This manual contains information on:

- Charger functionality.
- Use and setting of charger parameters.
- Technical specifications of the Lifespeed 3000 chargers.

Hawker intends to provide clear and simple information in this manual. Hawker assumes no responsibility for misunderstanding or improper interpretation of the information.

The owner of the equipment is required to preserve this manual for the life of the equipment and to transfer said manual to any subsequent purchaser.

Warranty

Warranty is offered by the manufacturer based on local regulations. Please contact your local distributor for further information.

Recommendations

Recommendations for safe operation

This manual should be carefully read, prior to using the equipment, by anyone intending to use the charger. The Lifespeed 3000 charger:

- Never disconnect a battery from the charger if in operation. Either • allow the charger to terminate automatically or turn charger off prior to disconnecting.
- This charger comes equipped with an anti-arcing connector. Any battery used on this charger must be equipped with a matching connector, and its auxiliary input wire must be connected to battery positive (B+). Failure to make this connection will prevent the charger from operating.
- The charger must not have its air circulation impaired in any way, primarily around the air inlet areas. Dust accumulation must be removed every six months
- The charger must be used within its protection norms, and never be directly in contact with water.
- The charger must be used only within the temperature range specified in the technical specifications.
- The charger must not be installed on a surface subject to high vibration levels (proximity of motors, compressors, etc.).

Battery configuration

This charger is designed to be used with a Fast charge adapted battery. Only batteries equipped with:

- An easyplus device with appropriate configuration
- Specific defined connectors in accordance with charging rates.
- Specific harness and battery plug equipped with auxiliary contacts. may be used with this charger.

Operator safety

All proper precautions must be observed when the equipment is used in areas where accidents are possible. Insure proper ventilation when the charger is used with lead-acid batteries. Do not disconnect the battery while the Lifespeed 3000 is charging.

General warnings

Requirements for use:

- The equipment must be properly grounded.
- The input voltage must match the charger requirements.
- The battery voltage must match the charger's capabilities.
- The battery capacity is within the charger's range.

Electrical safety

Safety regulations and requirements must be observed. Safety devices installed ahead of the chargers must be of the proper type and rating. It is important to ensure that only fuses of the proper capacity be used, should they need to be replaced. This charger meets the Class 1 Electrical Safety requirements, and therefore needs to be properly grounded during installation. It must be connected to a power supply equipped with a ground cable, and the ground connection should be as short as possible. The equipment must be totally disconnected from all power sources (grid and battery) before it can be opened for inspection or servicing. The battery can only be disconnected after the main ON/OFF switch has been pushed to the OFF position. Access to the inside of the charger should be restricted to authorized maintenance personnel.

Please consult a qualified factory representative about any problems or questions related to the installation of this unit.

This charger is designed to be used in a sheltered area. It is meant exclusively to recharge lead batteries in an industrial environment.

Product recycling

When this charger becomes obsolete, it can be recycled by authorized recycling facilities. Local regulations will prevail and must be followed.

Modifications and improvements

Hawker reserves the right, at any time, to modify or improve its products, without any obligation to update this product or this manual accordingly.

Receiving - Storage

Upon reception, please inspect visually the exterior of the charger for any possible damages. If necessary, proceed within 24 hours with the usual claims with the transport company.

If the charger is to be stored before use, it should remain in the original packaging, carefully closed. Store in a clean, dry area at a moderate temperature (0 °C to +40 °C). If the equipment is stored at a temperature below 15°C, it must be gradually restored to operating temperature before use, to prevent the risk of condensation that could cause electrical faults and short-circuits.

Replacement parts

Please supply the unit's serial number, indicated on the information plate when ordering any replacement parts.

Information plate

Located on either side of the charger.

Glossary

Charger Features

The Lifespeed 3000 Series chargers are managed by a micro-processor. The micro-processor reads the battery capacity from the easyplus and sets the charge current appropriately. This allows the charger to work over a wide range of battery capacity.

Charge factor

Charge factor is the quantity of Ampere Hours returned to the battery during the charge cycle versus the amount removed during the last discharge.

Refresh Charge

A refresh charge maintains the battery at the optimum level as long as it is connected to the charger.

Desulphation charge

A desulphation charge is done prior to normal charging, and this charge restores the specific gravity of overly discharged or underused batteries.

Equalization charge

Done after the normal charge, it balances out the various cells.

Hawker easyplus

The easyplus is permanently mounted to the battery and communicates to the charger without the need for extra wires. Battery parameters necessary for the optimization of the charging process are communicated to the charger via the easyplus. The easyplus has an electrolyte level sensor.

Charging profile

Defines the profile of the current applied to the battery during charging, in relation to available time. The charger, coupled with easyplus, adapts to the battery based on capacity and state of charge in order to maximize overall battery life.

High Speed profile

Utilizing a specific patented algorithm, the electronic circuits of the Lifespeed 3000 charger reduce the natural resistance of the battery by introducing, at precise intervals, discharge cycles into the charging profile. This homogenization of the ions around the plates allows for a better distribution of the active ions in the charging zones. A substantially larger current can therefore be applied and sustained, resulting in a much faster charging process, while maintaining full temperature control during the charge.

If the battery temperature, communicated by the easyplus, is too high, the charger, before to start the charge, will switch on the air pump to cool down the battery. During this time the charger will display the message 'TEMP'. When the battery temperature is gone down to a specific threshold the charger starts the charge.

No risk for the battery, the charger will switch automatically to the Ionic profile if there are a fault on the air pressure or no communication with the easyplus.

Complete recharging of the battery is done in short time, while energy consumption is substantially reduced.

Ionic profile

Also called "Ionic Mixing" this profile consists of applying short current pulses to the battery, thus provoking gassing in the active material to diffuse the sulphuric acid off of the plates. This introduction of Ionic Mixing permits a faster charging of the battery and eliminates the differences in density by homogenizing the electrolyte throughout the cells. The ionic profile is not high speed and requires standard recharge times.

EEC declaration of conformity



Hawker hereby declares that the chargers in the Lifespeed ranges covered by this declaration conform to the descriptions laid down in European Directives 89/336/EEC, 93/68/EEC and RoHS 2002/96/EEC.

The Charger

Introduction

The Lifespeed 3000 series of chargers are compatible with batteries at 24, 36, 48 and 80 volts (depending on the version supplied). Battery recognition (voltage, capacity, state of charge, age, etc..) is accomplished by communication from the easyplus. Battery management is optimized through use of the easyplus. Two charging profiles are available (High Speed or IONIC) based on the configuration chosen by the operator. Furthermore, desulphation, equalization and compensation charges are integrated.

External components

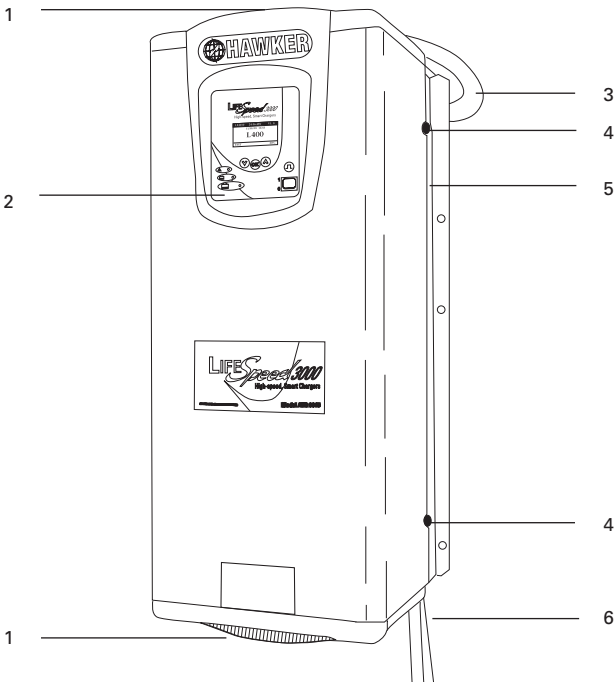
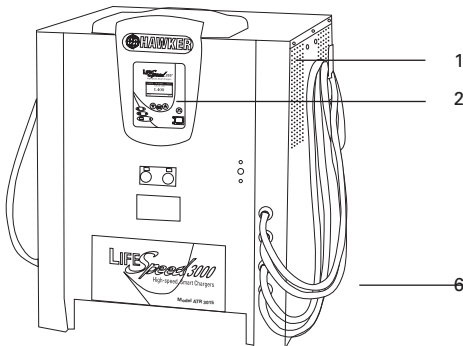


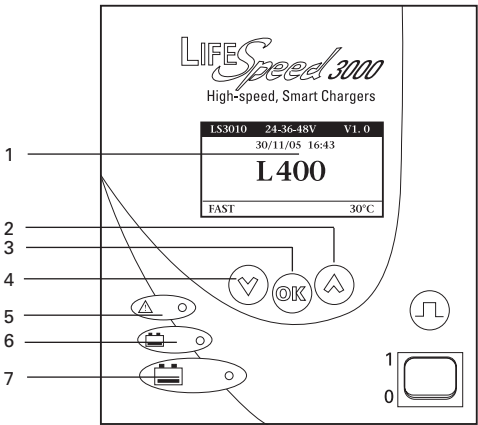
Figure 1: Principal components of the wall and floor mounted Lifespeed 3000 series charger models



Ref.	Function
1.	Ventilation fins.
2.	Display and Control panel (see fig. 2).
3.	AC Input cable.
4.	Hood retaining screw.
5.	Wall mount.
6.	Battery cables.

Control panel

Incorporates the Display and Control Panel. Please refer to The Menus (page 6) and Using the charger (page 8) for further details and features.



Ref.	Function
1.	Graphical LCD Display.
2.	Navigation button (UP)
3.	Accept / Select button.
4.	Navigation button (DOWN)
5.	RED fault indicator. OFF: no fault. Flashing: ongoing fault detected. ON: fault.
6.	YELLOW charging indicator. OFF : charger is off. ON : charging in progress.
7.	GREEN end of charge indicator. OFF : charger off or battery not available Flashing : cooling phase. ON : battery ready and available.
8.	ON / OFF switch
9.	Menu exit, equalization start or desulphation start button.

Figure 2: Charger Display and Control components

The Menus

The Menu provide access to the following functions :

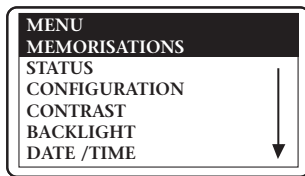
- Last 100 charging profiles (MEMORIZATIONS menu).
- Viewing of faults, alarms, etc.. (STATUS menu).
- Charger configuration (CONFIGURATION menu).
- Contrast adjustment (CONTRAST menu), backlighting of the display (BACKLIGHT menu), date and time (DATE/TIME menu), language (LANGUAGE menu) and display format (REGION menu).

Access to the menus

Button functionality

The pads provide the following functions :

Pad	Function
▼ ▲	Navigation within the menu.
OK	Select active menu or Select highlighted value.
⏮	Close the window / Cancel.



Each of the eight available menus is described below (the last menu lines LANGUAGE and REGION are only visible after pressing the ▼).

Escape a Menu

The active menu is automatically cancelled after one minute of inactivity or by pressing the ⏮.

Memorized data

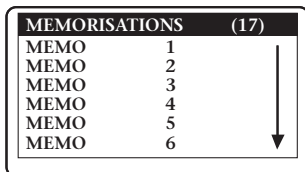
Displays historical data from the last 100 charge cycles.

Access

From the main menu select MEMORIZATIONS and press OK.

The List screen

The sample screen below indicates that 17 records exist (title line). MEMO 1 refers to the latest record. After the 100th record is memorized, the oldest will be replaced automatically.



To view a charge history

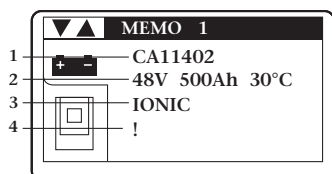
Proceed as follow:

1. Select a record (MEMO x) by pressing ▼ or ▲.
2. View the first screen by pressing OK.
3. View the second screen by pressing ▼.
4. View the third screen by pressing again on ▼.
5. Return to the main menu by pressing ⏮.

Displayed information

The charge profile history is displayed on three screens.

Screen #1 (battery information)

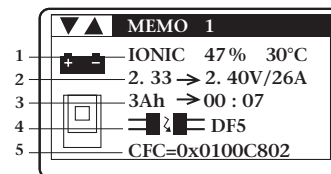


Ref.	Information
1.	Battery serial number.
2.	Voltage, capacity & recorded temperature prior to charging.
3.	Detected profile.
4.	Alarm Icon (see Table A).

Icons	Alarms
!	Alarms present.
⚡	Low electrolyte level.
⚡	Uneven battery voltage.
°C	Excessive temperature.
⚡	Missed equalization cycles.
⚡	Excessive overdischarge.
⚡	Excessive daily cycles.
⚡	easyplus disconnection.

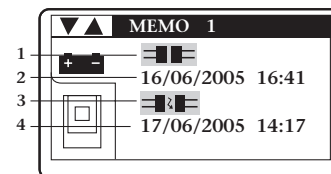
Table A: Alarm icons.

Screen #2 (charger information)



Ref.	Information
1	Type, state of charge and temperature recorded prior to the charge.
2	Voltage per cell before and after charging, and current at termination of charge.
3	Capacity restored and total charging time (format hr:min).
4	End of charge condition icon : Normal. Normal with interruption (voluntary or caused by a fault). Type and time of fault (see Fault Codes, page 9).
5	Coded end of charge indicator.

Screen #3 (connection, disconnection)



Ref.	Information
1.	Battery connected symbol.
2.	Time and date of battery connection.
3.	Battery disconnection symbol.
4.	Time and date of battery disconnection.

Reset of displayed information

Resetting the information displayed on these three screens is done by pressing the Reset command from the CONFIGURATION menu (see page 7).

Status

This menu displays the charger's internal counters (number of normal charges, of equalization charges, faults by type, etc..)



Access

From the main menu select STATUS and press OK.



The Screen

Information is displayed on one screen.

As an example:

STATUS		
CHARGE	→ 20	DF2 → 0
	→ 6	DF3 → 0
	→ 14	DF4 → 0
EQUAL	→ 5	DF5 → 0
TH	→ 0	DF7 → 1
DF1	→ 0	DF8 → 0
		DF9 → 0

The above display corresponds to the following data:

Indication Information	
Charge	Total number of charges. Corresponds to the total of normally terminated charges and charges terminated with or by faults.
	Number of charges terminated abnormally.
	Number of charges normally terminated.
EGAL	Number of equalization charges completed by the charger.
TH	Number of temperature faults*.
DF1 etc.	Number of faults recorded by the charger (see Fault Codes on page 9).

Reset of displayed information

Resetting the information displayed on these three screens is done by pressing the Reset command from the CONFIGURATION menu.

Configuration

This menu leads to the ten charger configuration menus.

Access

With the charger at rest (main switch on « 0 »), press **OK**. On the first menu select CONFIGURATION and press **OK**. Use the two ▼ and ▲ pads to display the number corresponding to your password and confirm by pressing **OK**. The main menu will come up.

Profile

Determines the charging profile for the battery connected (Ionic or Fast). To change the profile, press **OK**, select a profile from the list with the ▼ ▲ pads and confirm by pressing **OK**.

Temperature

Sets the battery's starting operating temperature between 0°C and 55°C. Please note that the scale displayed is in function of the Region selected in the Configuration.

- **With easyplus:** the battery's operating temperature is set automatically. It is highly recommended, especially in colder environments to enter the battery's average temperature value.

Equalization

Equalization can be started manually or automatically at the end of charge. See the paragraph End of Charge with Equalization on page 9.

Equalization time

Sets the duration from 1 to 48 hours.

Equalization delay

Sets the start delay from 0 to 8 hours.

Frequency

Defines in real time the equalization periods (Never, Daily, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday).

For example, choosing **Monday** will start the equalization process every Monday, based on a duration and delay programmed under **Equalization Time** and **Equalization Delay**. The equalization can be started automatically or manually. See paragraph *End of Charge with Equalization* on page 9.

Delayed Charge

Two way to set a delay charge:

- Defines a delay between 0 and 8 hours between the time that the battery is connected, and the actual start of the charging process.
- Defines an hour to start the charge (hh:mm), if the battery is connected to the charger the charge will start at the program hour. Allows for charging during "Off peak" periods.

Battery Rest

Defines a waiting period from 0 to 8 hours after the end of the charge to allow the battery to cool off.

Cable Length

Length of battery cable from the connector to positive post of battery. Acceptable range is from 1 to 10 meters.



This parameter is very important as it directly affects characteristics of the charging profile.

Cable Section

Determines the cross-section of the battery cables in mm². Select a section from the list displayed. If different sizes are being used on the battery and the charger, enter the smaller of the two.



This parameter is very important as it directly affects characteristics of the charging profile.

Reset

Resets the counters in **Status** and **Memorized Data** after you put in the password; this password is different than the one used to enter into Configuration.



Version config

Shows the charger's configuration version.

Contrast

Modifies the display contrast level. A value of 0 displays a white screen ; a value of 100 displays a black screen.


The optimum value varies with ambient light. If you cannot read the screen (screen black or white):

1. **Press and hold**  **and**  **at the same time.**
2. **When the LEDs start flashing (Fig. 2), adjust the contrast with the ▼ or ▲ pads.**
3. **Confirm by pressing OK.**

Backlight

Activates (ON) or deactivates (OFF) the display's backlighting system.

Date / Time

Adjusts system date and time. Use the ▼ or ▲ pads to increase or decrease the values. Use the **OK** button to switch from date settings to time settings. Press the  confirm and exit the menu. **CAUTION:** Time and date are only saved for three days if the charger is disconnected.

Language

This selects the language displayed in the menus.

Using the Charger

Unpacking

The Lifespeed 3000 is delivered with the following:

- 3 m battery cables.
- This user's manual.

Mechanical installation

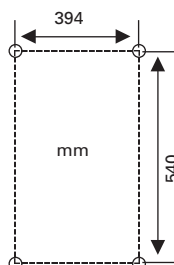
Any area subject to water or spills of any kind must absolutely be avoided. The table on page 10 provides all of the pertinent physical dimensions of the equipment.

Floor mounted chargers

This applies to models 3020 and 3030. The minimum distance allowed between two chargers must be 0.30m.

Wall mounted chargers

This applies to models 3010 and 3015. The unit must be mounted in a vertical position. The bottom of the charger must be at least 0.60m from the floor and/or the charger below and the top of the unit at least 1.0m from the ceiling. The minimum distance between two chargers must be 0.30m. **You must avoid areas where the chargers may be splashed with water.** The charger is held by 4 M8 screws suitable for the type of support. For the drilling pattern follow the illustration below.



Electrical connections

Three phase input

Connection to the grid will be 400 volts / 3-phase and be done through a proper plug and adequately sized circuit breaker (not included). Current requirements in Amps are indicated on the charger's information plate.

Battery output

It is essential to ensure proper polarity. However, reversed polarity will result in blowing the output fuse, inability to charge, and the fault code DF2 to be displayed. See *Fault Codes* on page 9.

Connection to the battery will be done through the supplied cables:

- RED Cable: Battery POSITIVE.
- BLACK Cable: Battery NEGATIVE.

Additional note for Lifespeed 3000 model 3030 only:

Because of the high current level generated by this unit, two independent sets of cables will be supplied. The MASTER cables will be equipped with air connector. These will be connected to the corresponding connectors on the battery. The MASTER & SLAVE connectors must always be connected for the charger to operate.

Factory setup

The Lifespeed 3000 is delivered with the following default setup :

Profile:	As ordered
Output cables length:	4 m
Configuration:	As ordered
Automatic equalization:	No
Delayed start enabled:	No

- If no modifications are required, go directly to the section: **Charging the Battery.**
- If changes are needed, go to the Configuration section on page 7.

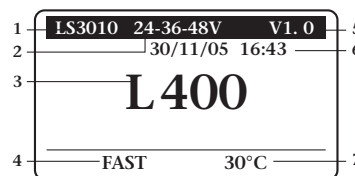
Charging the battery

It is now assumed that the charger has been set up as per the *Configuration*, on page 7. Charging can only begin with a battery of the proper type, capacity and voltage connected to the charger.

Off Charge Display

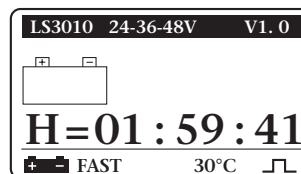
With the Lifespeed 3000 in wait mode (On/Off switch in the « 0 » position) and without pressing the **OK** button, the display shows information relative to the charger on the top and bottom lines:

1. **Charger type and model (LS stands for Lifespeed).**
2. **Charger characteristics.**
3. **Wait mode (line voltage 400).**
4. **Last charging profile selected.**
5. **Firmware version.**
6. **System time and date (optional).**
7. **Selected battery operating temperature.**





Delayed Start

If the charger was programmed for delayed start (*Configuration menu / Delayed Start*), charging will begin following that delay. The display shows the time remaining before the programmed charging starts.



Starting a Desulphation cycle

To start the desulphation cycle manually:

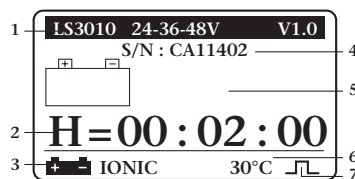
1. **Push the ON/OFF switch to « 0 ».**
 2. **Press and hold the button** .
 3. **Push the ON/OFF switch to « 1 ».** Release the .
- Desulphation will now run for the programmed time. The standard charging cycle will have to be started manually after the desulphation cycle is complete.

Starting the Charge cycle

1. **Push the ON/OFF switch to « 1 ».**

The display shows various information relative to the battery connected to the charger, and counts down the time remaining until the effective charge begins.


Ref.	Information
1.	Charger type, voltage and current information and firmware version.
2.	Maximum of two minutes countdown before the effective charge begins.
3.	Detected charging profile will be flashing as information is received. (a).
4.	Alternates between serial number and capacity as information is received (a).
5.	Possible fault display area, after 2 minutes (see § Fault Codes on page 9) (b).
6.	Operating temperature as detected (a) (c).
7.	Icon for requested equalization after charging (see § End of charge with Equalization on page 9).

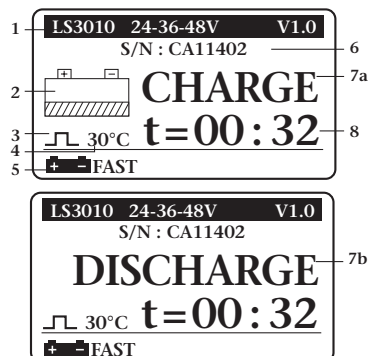


- (a) After the two minutes of countdown, the display shows information relative to the charging process. See the paragraph on «Effective charge».
- (b) The following faults will prevent charging: DF1, DF2, DF3, TH, TEMP and STOP; they will be displayed after the 2 minute countdown. See paragraph «Fault codes» on page 9.

Effective charge

A few moments into the effective charge, the display will begin alternating between the following charging information:


Ref.	Information
1.	Charger type, voltage and current information and firmware version.
2.	Possible priority alarm (the  shows up within the battery symbol, if the electrolyte level is low in the battery), only available when battery is equipped with the easyplus
3.	Equalization requested after the charge.
4.	Operating temperature as detected.
5.	Detected charging profile.
6.	Alternates detected serial number and capacity.
7.	Indicates charge (7a) or discharge (7b) cycles.
8.	Cycled updated information. Please refer to Table B on page 9 below.

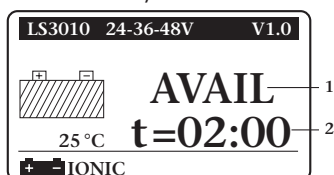


Cycled information (ref. #8 above)		
Sign	Measurement	Example
U	Battery voltage (V).	26.1
u	Voltage per cell (V).	2.18
I	Actual charging current (A).	55
C	Capacity restored (Ah).	71
t	Total charging time (hrs:min).	03:36
DF	Eventual fault code. See § Fault Codes on page 9.	DF5

Table B: Information icons (during charge).

End of charge without equalization

- The green LED comes on after a proper end of charge.**
The green LED  is on and the display shows AVAIL (ref. 1). The display alternates between (ref. 2) :
• Total charging time.
• Amp/hrs restored to the battery.



See paragraphs *Memorizations* (page 6) or *Status* (page 7) for details on end of charge information. Any other lit LED indicates a problem during charging.

Please refer to paragraph *Control Panel* on page 5.

If the battery remains plugged in, in order to maintain an optimal charge, refresh and equalization charges will be automatically triggered, if selected, based on battery type.

- If an equalization charge was programmed, it will be automatically started.**
If not, an equalization charge can be started manually at this point; go to paragraph End of Charge with equalization below.
- If the green LED is flashing, the battery is in rest mode.**
Wait until the flashing stops.
- Push to ON/OFF switch to « 0 ».**
- Unplug the battery. It is ready for use.**

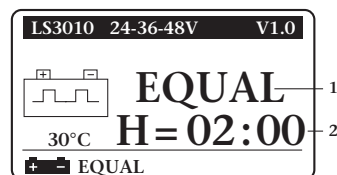
End of charge with equalization

Can be started manually or automatically.

Manual start

- At the end of charge (green LED  on or flashing), press on the .** The start of the equalization charge is indicated by the message

EGAL I = (equalization current) and EGAL H = remaining equalization time) (ref. 1 and 2 below).



- The battery will be available when the green LED (Fig. 2, ref.7) comes back on.**

Automatic start

If equalization has been already programmed (*Configuration Menu*, *Equalization time*, *Equalization delay*, and *Frequency* (page 7), the equalization charge will start automatically. Also, if the battery remains plugged in, in order to maintain an optimal charge, refresh and equalization charges will be automatically triggered, if selected, based on battery type. The same information as for the manual start (see above) will be displayed.

Historical data per charge

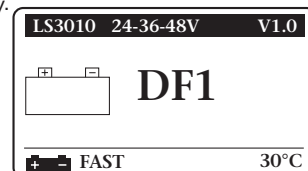
For viewing and resetting of historical data, please refer to paragraph *Memorizations* on page 6.

Charger's historical data

For viewing and resetting of the charger's history, please refer to paragraph *Status* on page 7.

Fault codes


In case of a fault, the display shows the corresponding fault code (DF1 in the example below). When several faults are present, the fault codes will be cycled on the display.



Fault	Cause	Solution
DC	Shows up prior to DF1 fault.	
DF1	Charger problem.	Critical fault. Check input voltage.
DF2	Output fault.	Critical fault. Check for proper battery connection (reversed polarity). Check output fuse.
DF3	Improper battery.	Critical fault. Battery voltage too high or too low. Use proper charger for battery.
DF5	Battery requires inspection.	Non critical fault. Check battery cables for condition and size, check for loose connections, check for defective cells.
DF7	Pneumatic mixing air circuit fault (the red light flashes).	Check the air circuit (pump, tubing). The charging operates in IONIC profile if there is an air circuit fault.
DF8	Communication fault between the charger's internal modules.	3020 and 3030 models only. Non critical fault. Contact servicing agent.
DF9	Fault in discharge circuit. Charger reverts to Ionic profile.	Non critical fault. Contact servicing agent.
STOP	Critical battery electrolyte level.	Critical fault. Top up battery electrolyte (only indicated if using easyplus).
TEMP	Critical battery temperature.	Critical fault. The charger is waiting that the battery temperature goes down to start the charge (only indicated if using easyplus).
TH	Thermal problem in charger resulting in charge interruption.	Critical fault. Check that fans are working. Verify that ambient temperature is not too high. Inspect to see if charger ventilation is obstructed or impaired.

TECHNICAL SPECIFICATIONS

Specification	Units	LS3010	LS3015	LS3020	LS3030	LS3040
Power	KW	10	15	20	30	40
		24/36/48V	24/36/48V	48V	48V	80V
Input voltage	V	80V				
Frequency	Hz	400 ±10% / 3 ph				
Nominal current draw	A	50/60				
Input cable (4x)	mm ²	17	25	35	50	55
Input fuse	A	4	6	10	16	16
Battery cables	mm ²	Protistor 32 A	Protistor 40 A	Protistor 63A	Protistor 80 A	Protistor 100 A
DC Plug		50	70	95	2 x 70	2 x 70
		DIN43589-1 320A With Air and Auxiliary	DIN43589-1 320A With Air and Auxiliary	DIN43589-1 320A With Air and Auxiliary	DIN43589-1 320A With Air and Auxiliary	2 x DIN43589-1 320A With Air and Auxiliary
Battery cables length (Default)	m	1 to 10 (3)				
IP Protection		IP20				
Operating temperature	°C	0 to +40				
Display		LCD				
Weight	kg	60	60	120	120	140
Dimensions (H x W x D)	mm	750 x 410 x 317 Wall Mounting	750 x 410 x 317 Wall Mounting	859x728x697 Cabinet	859x728x697 Cabinet	859x728x697 Cabinet



Wherever in Europe you do business, Hawker can support you with motive power energy. The Hawker branded battery range, matched chargers and systems provide trouble free performance under the most demanding service conditions.

Our strategically located manufacturing plants are efficient and responsive with a culture of continuous improvement and added value for our business partners.

Hawker has an enviable position in technology leadership and with significant investment in research and development we intend to stay at the leading edge in product innovation. Hawker evolution batteries and Hawker HF chargers, Lifeplus and Powertech have set new standards in maintenance free solutions. Our team of development engineers is driven by the desire to build the best energy solutions and works closely with our customers and suppliers to identify development opportunities. Our bias for rapid innovation means we get new products to market fast.

Hawker's integrated sales and service network across Europe is dedicated to providing our customers with the best solutions and after-sales support for their business. Whether you require 1 battery or a complete fleet of batteries, chargers, a battery handling system and a state of the art fleet management system, you can count on us. As part of EnerSys the world's largest industrial battery manufacturer, we are dedicated to being the best.



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